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EXCESS FARM SUPPLY: PERMANENT OR TRANSITORY?

Dealing effectively with economic ills of agriculture requires an understanding of their sources. The analysis here emphasizes supply; it is, however, impossible to trace price and income trajectories without also acknowledging the role of demand.

SOURCES OF THE 1980S FARM RECESSION

The current farm recession began in 1980. The parity ratio (1910–14=100) fell from 71 in 1979 to 64 in 1980, 61 in 1981, and 57 in 1982. Meanwhile, net farm income fell from $32 billion in 1979 to $20 billion in 1980 and 1982, and $25 billion in 1981.

The economic downturn traces to farm output supply and demand. Demand (measured here by growth in domestic population, real income per capita, and exports), varies widely from year to year, mainly because of the high and growing share of volatile exports in total demand. (See Table 1.)

In the 1950s, supply increased faster than demand and generated excess capacity which carried into the 1960s. (See Table 1.) This excess capacity was sufficient to require considerable commodity supply control, even though supply increased at about the same rate as demand during the 1960s. In the 1970s, demand increased faster than supply and, as expected, economic conditions improved for the farming industry as a whole. Whether measured by adjusted or unadjusted exports, the annual rate of increase in demand averaged two percent from 1971 to 1982.

Depressed farm economic conditions had quite different origins in each of the three years of the 1980s. Between 1979 and 1980, unadjusted demand increased four percent and productivity declined nearly six percent for a substantial ten percent excess demand. How could the farm recession begin in early 1980 despite the highly favorable real demand-supply balance? The downturn was caused partly by negative psychology induced by the export embargo to the Soviets early in 1980 and by convergence of the hog and cattle cycles at high output. But it was caused mostly by the cost price squeeze induced by national inflation (the GNP deflator increased nine percent) which, on the average, shows more quickly and fully in prices paid by farmers (prices for production items of nonfarm origin increased sixteen percent) than in prices received by farmers, which increased only slightly. The situation was very different between 1980 and 1981, when demand increased modestly, but productivity (due to weather) surged, creating a large excess supply of twelve percent. Between 1981 and 1982, productivity remained high and advanced supply at a somewhat normal rate; demand dropped, however, creating 2.5 percent excess supply.

The cost price squeeze generated by inflation in the expansion phase of the business cycle in 1980 should have worked in reverse in the general recession of 1981–82 by dampening interest rates and prices paid by farmers, but a restrictive monetary policy coupled with an expansionary fiscal policy (deficit spending) helped create high real interest rates, an overvalued dollar in international markets, and a depressed U.S. and world economy. The delayed effect of using food as a political weapon in 1980 and 1981 also slowed U.S. farm exports in 1982. These sources of retarded export demand can be expected to persist until the world makes a significant economic recovery.

In short, the major causes of the U.S. farm recession in the past three years were national inflation and the attendant cost price squeeze in 1980, usually high crop yields and attendant oversupply in 1981, and lagging demand caused by worldwide recession and overvalued dollar in 1982.

TABLE 1*
Estimated Annual Percentage Increase
In Real Demand, Supply, and Excess Demand for U.S. Farm Output
1949 to 1982

Years or Decade	Demand (unadjusted)	Supply (productivity)	Excess Demand
1949-1959	1.9	2.1	-0.2
1959-1969	1.9	1.8	.1
1969-1979	2.7	1.9	.8
1979-1980	4.0	-5.7	9.7
1980-1981	.3	12.0	-11.7
1981-1982	-.7	1.8	-2.5

*Data from Council of Economic Advisers

SUMMARY AND CONCLUSIONS

Any projection is hazardous, but the best guess is that supply and demand are likely to increase at somewhat comparable rates from 1982 to 2000.

The future is unlikely to be dominated either by chronic surplus or shortage of food and fiber. Rather, periods of acute food crisis and acute farm income crisis will appear sporadically to year 2000 and beyond.

Simple extension of current economic moods into the future is a widespread, but inappropriate projection. In 1966-67, and again in 1973-74, many (including "experts") were saying that the world food demand henceforth would outpace supply and that farmers would not again face crop surpluses or low prices. In the excess supply period 1933-41, 1953-65, and currently, the tendency is to expect surpluses to persist. But permanent surplus is a no more realistic projection today than was permanent shortage 1973-74.

Economic crises of surplus or shortage are difficult to predict, in part because they have multiple origins. For example, the crisis of short food supplies in 1973-1974 traced to such disparate sources as unfavorable crop weather in the United States and U.S.S.R., a low point in the U.S. cattle cycle and low anchovy catch off the coast of Peru. The current economic crisis began from multiple causes—unfavorable monetary fiscal policy, unusually favorable weather, weak world economy, and peak output in the hog and cattle cycles.

The current economic crisis in agriculture is simply another of the recurring series of economic setbacks that have plagued agriculture since its very origins. Future crises of abundance and shortage will occur, but it is impossible to predict when because of the compound sources of economic setbacks and the role of unpredictable political action and weather in the process. The most likely U.S. agriculture scenario in the next two decades is for real farm prices and supply demand ratios to show no strong upward or downward trend, but to fluctuate considerably around a somewhat flat trajectory.

Excess capacity and adjusted requirements

The estimated current excess resource capacity, a residual from high prices in the mid 1970s, represents fewer adjustment problems than did resources in the 1960s. Then labor was in excess by up to 40 percent: currently the excess is mostly in capital resources that can be reduced in a comparatively short time, although two or three years of farm prices in the 55-60 percent of parity range may be required. Much of the excess resources may be in the midsize farm classes.

Indications are that the 61 percent of parity prices experienced in 1981 may not be abnormal, but may be sufficient to induce output in line with demand and provide returns that cover all costs on adequately sized and managed farms in the 1980s. Operators of the smallest units that accounted for over 70 percent of all farms received negative net farm returns in 1981. But off farm income was sufficient to offset farm losses and provide a reasonably adequate total income (see U.S. Department of Agriculture, 1982, p. 98). The importance of off farm income is illustrated by the fact that, although aggregate real net farm income was the second lowest since 1933, personal disposable income per capita of all farm people averaged 88 percent that of nonfarmers!

Farmers now have considerable mobility and comparatively few are trapped in chronic low return operations by inertia and lack of knowledge. Most small farms that appear inefficient in Table 2 when all inputs are paid opportunity costs probably are not "privately" inefficient when the consumption value of the farm way of life, tax savings, and other benefits of residing on small units are considered. That is, part time small farmers pay for their farming out of nonfarm income, much as they would pay for a sports car or yacht.

The incidence of hardships is especially high on the midsize full time farms which incur farm income losses without offsetting income from off farm employment. These farmers face difficult times to year 2000. Because of their unique circumstances, they will provide a principal source of political pressure for commodity price supports. Price supports set high enough to maintain the economic viability of these farms may induce overproduction, require large acreage diversion programs, entail sizable Treasury outlays for commodity programs, and unduly inflate land prices by bringing windfall gains to efficiently sized and managed farms.

Parity farm prices

Prices necessary to cover all costs of production on efficiently sized farms have declined substantially since my estimate of approximately 75 percent of parity in 1979. (1910–14=100.) Data in Table 2 are subject to error, do not apply to every commodity, and must be interpreted with caution, but the shift in production and market economies toward larger farms since 1970 is consistent with trends in overall productivity. During the 1970-81 period, overall farm production efficiency increased 29 percent based on U.S. Department of Agriculture (1983) productivity estimates, while the parity ratio required to cover all costs on large farms decreased 27 percent, according to results in Table 2. This result is consistent with economic theory.

Farms that account for half of farm output now cover all resource costs with prices 54-62 percent of parity. With demand and supply expected to increase at roughly comparable rates on the average to year 2000, farm prices will tend to gravitate to the cost of production on these efficient farms. Because these farms will set land prices for all, less efficient farms will lose money even owning land with full equity if all their resources are valued at opportunity costs. If a higher parity price ratio is maintained by government programs, land values will be bid up, so that the same pattern of losses on smaller farms will prevail.

Farm problems

The principal economic problem of the farming industry in the next two decades will be the same as that of the previous four decades—instability. On the average, farming returns are likely to cover all costs as they did in the previous four decades, but periods of losses will alternate with periods of profit. The problem will be exacerbated by huge assets required for an economic unit, life cycle financing problems of family farms, high cash

TABLE 2
Unit Costs, Efficiency, and Parity Price Requirements by Economic Class of Farms
United States, 1981

Item	Economic class by farm sales							
	Less than $5,000	$5,000-$9,999	$10,000-$19,999	$20,000-$39,999	$40,000-$99,999	$100,000-$199,999	$200,000 and over	All Farms
1. Structure components								
a. number of farms (thousands)	843	335	286	278	396	186	112	2,436
b. percent of all farms	34.6	13.8	11.7	11.4	16.3	7.6	4.6	100.0
c. percent of all output	1.6	2.0	3.2	6.2	19.0	19.0	49.0	100.0
d. percent of all input	6.4	3.9	4.8	7.7	21.1	19.3	36.8	100.0
2. Efficiency measures under 3b assumptions								
a. output/input (dollars)	.19	.38	.51	.60	.68	.74	1.00	.75
b. input/output (dollars)	5.17	2.63	1.96	1.67	1.48	1.35	1.00	1.33
c. output from 1981 input used with respective farm class efficiency (billions of dollars)	34.7	69.4	93.1	109.5	124.2	135.1	182.6	136.9
d. input required to produce 1981 output with respective farm class efficiency (billions of dollars)	797.6	405.8	302.4	257.6	228.3	208.3	154.3	205.2
e. number of farms required to produce 1981 output with respective farm class (thousands)	51,467	17,063	8,848	4,510	2,086	977	229	2,436
3. Parity ratio (1910-1914 = 100) required to cover all costs:								
a. short term debt 15 percent, long term 10 percent, equity 8 percent	368	189	145	123	102	87	62	84
b. short term debt 8 percent, long term 5 percent, equity 5 percent	281	143	106	90	80	73	54	72
c. same as (b) but uniform 6 percent labor-management input share	203	116	93	82	75	72	54	68

*Source: USDA and Tweeten and Huffman

costs which cannot be deferred or absorbed, and by the increasing proportion of volatile exports in total demand. Repeated intrusion of U.S. foreign policy into farm exports has dampened exports and made the United States a residual food exporter. The challenge of keeping export markets open and free of political manipulation will be chronic.

A second major continuing farm problem will be cash flow and other difficulties stemming from inappropriate monetary fiscal policy. A tight federal monetary policy depresses short run demand at home and abroad, but reduces inflation and farm cash flow problems. A loose federal fiscal policy of large current and planned post recession federal deficits crowds out private investment and drives up short term interest rates. Investors' fears that the Federal Reserve Bank will be unable to restrain the money supply in the face of high federal deficits adds a significant inflation premium to long term interest rates. High nominal interest rates coupled with low inflation means high real interest rates which attract foreign investment, drive up the value of the dollar in foreign markets, and depress U.S. farm exports. A federal buget out of control will extend the duration of high real interest rates, retard economic recovery, and perpetuate excess capacity in agriculture.

Some problems will be peculiar to certain segments of the farming industry. One is extension of efficient farm size to larger operations, placing many traditional midsize family farms in the less efficient size categories. Adjustments will be especially painful because many such farms have traditionally been the backbone of agriculture, farm organizations, and the rural community.

Conditions to restore vitality

Restoration of economic vigor to the farming economy will require three principal conditions:

1. A growing U.S. economy and world economy without high inflation. The United States working with other nations to promote international free trade, sound domestic monetary fiscal policy and international financial stability will hasten recovery and sustain progress.
2. Decisive action to reduce U.S. wheat and dairy stocks.
3. No better than normal weather.

LUTHER TWEETEN

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Nebraska's economy expanded for the sixth consecutive month in June 1984. Output, as measured by the Bureau of Business Research's physical volume index, rose 0.4 percent as compared to May. Compared to June 1983, the index was 3.7 percent higher. Both the Nebraska and the United States economies appear to have slowed from the vigorous growth recorded during the first quarter and the beginning of the second quarter of 1984.

Only two of the state's five sectors gained during June (one sector remained unchanged). Output in the agricultural sector grew most rapidly with an increase of 3.3 percent. Manufacturing was the other growing sector; its index added 2.2 percent. The distributive sector remained unchanged, government fell 1.5 percent, and construction dropped 7.6 percent. Collectively, output in the four nonagricultural sectors remained unchanged, as growth in manufacturing was offset by losses in government and construction.

Cash receipts from farm marketings in June totaled $448.1 million, up $125.8 million from May (unadjusted for seasonal variations). However, receipts were down $7.1 million from June 1983. Throughout the first half of 1984, receipts have generally been below those of the previous year.

On a month-to-month basis, prices received by Nebraska farmers were down 0.8 percent, but were up 5.0 percent on a year-to-year basis. Prices for the first six months of 1984 have

(continued on page 5)

Notes for Tables 1 and 2: (1) The "distributive" indicator represents a composite of wholesale and retail trade; transportation, communication and utilities; finance, insurance, and real estate; and selected services. (2) The "physical volume" indicator and its components represent the dollar volume indicator and its components adjusted for price changes using appropriate price indexes—see Table 5, page 5.

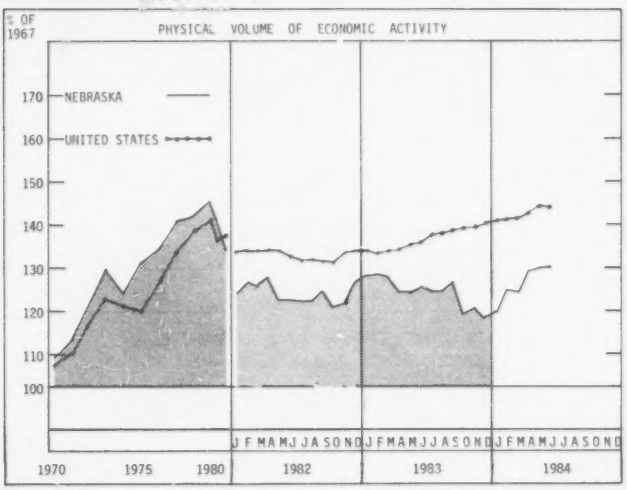
ECONOMIC INDICATORS: NEBRASKA AND UNITED STATES

1. CHANGE FROM PREVIOUS YEAR

June 1984	Current Month as Percent of Same Month Previous Year		1984 to date as percent of 1983 to date	
Indicator	Nebraska	U.S.	Nebraska	U.S.
Dollar Volume	108.3	110.3	104.5	110.9
Agricultural	103.9	95.7	84.6	96.0
Nonagricultural	108.9	110.7	107.8	111.3
Construction	120.5	117.1	137.6	121.0
Manufacturing	118.8	116.2	116.4	115.6
Distributive	103.9	109.1	102.3	110.1
Government	115.1	106.8	113.8	106.7
Physical Volume	103.7	105.9	99.8	106.3
Agricultural	99.0	88.7	80.8	88.7
Nonagricultural	104.5	106.4	103.3	106.9
Construction	117.3	114.0	134.0	118.0
Manufacturing	115.2	112.8	112.8	112.3
Distributive	99.7	104.7	98.0	105.5
Government	105.6	100.0	104.7	100.2

2. CHANGE FROM 1967

	Percent of 1967 Average	
Indicator	Nebraska	U.S.
Dollar Volume	373.0	423.8
Agricultural	348.2	314.4
Nonagricultural	376.6	427.3
Construction	317.1	411.8
Manufacturing	386.4	329.2
Distributive	374.6	483.5
Government	414.7	427.4
Physical Volume	130.2	144.4
Agricultural	138.2	120.9
Nonagricultural	129.0	145.1
Construction	94.1	122.2
Manufacturing	155.1	129.2
Distributive	120.6	155.6
Government	149.5	147.4

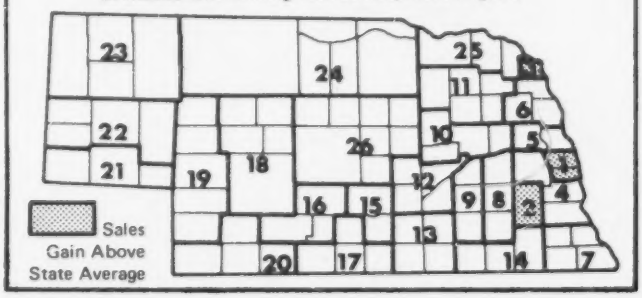


3. NET TAXABLE RETAIL SALES OF NEBRASKA REGIONS AND CITIES

Region Number[1] and City	City Sales[2]	Sales in Region[2]	
	June 1984 as percent of June 1983	June 1984 as percent of June 1983	1984 to date as percent of 1983 to date
The State	106.7	107.5	107.0
1 Omaha	117.4	120.4	113.3
Bellevue	126.5		
Blair	101.1		
2 Lincoln	108.4	107.9	109.4
3 So. Sioux City	139.5	125.7	105.7
4 Nebraska City	91.7	91.4	97.7
6 Fremont	102.5	95.5	98.6
West Point	83.4		
7 Falls City	86.6	86.5	93.8
8 Seward	88.3	90.3	100.0
9 York	92.4	90.4	99.3
10 Columbus	97.9	95.3	97.4
11 Norfolk	100.2	95.8	96.1
Wayne	95.2		
12 Grand Island	103.9	100.8	101.8
13 Hastings	99.0	93.9	100.1
14 Beatrice	84.3	84.9	93.8
Fairbury	82.8		
15 Kearney	102.2	99.6	101.6
16 Lexington	97.0	89.4	96.0
17 Holdrege	103.2	96.2	94.9
18 North Platte	95.8	95.5	99.2
19 Ogallala	105.4	99.5	103.2
20 McCook	91.4	88.3	95.9
21 Sidney	93.4	91.8	102.9
Kimball	94.0		
22 Scottsbluff/Gering	95.5	96.8	101.3
23 Alliance	92.9	91.3	97.3
Chadron	91.5		
24 O'Neill	95.7	93.1	93.9
25 Hartington	91.4	84.4	89.3
26 Broken Bow	93.1	92.5	92.7

State totals include sales not allocated to cities or regions. The year-to-year ratios for city and region sales may be misleading because of changes in the portion of unallocated sales. Region totals include, and city totals exclude, motor vehicle sales. Sales are those on which sales taxes are collected by retailers located in the state. Compiled from data provided by Nebraska Department of Revenue.

1984 Year to Date as Percent of 1983 Year to Date in Nebraska's Planning and Development Regions



(continued from page 4)

averaged about five percent higher than the comparable 1983 period.

The growth in manufacturing output was reflected in its level of employment. The 91,500 manufacturing employees in June marked the highest number of employees since the first two months of 1982, and represent an increase of nearly 10,000 from the lowest level during the most recent recession.

Construction's drop in output reflects the rise in interest rates that occurred at the beginning of the summer. Even though construction was 17.3 percent higher than June 1983 levels, it appears unlikely that the level of growth so far during 1984 will be sustained; construction will remain below 1970s levels.

The performance of the distributive sector has been rather lackluster so far during 1983. There have been several month-to-month changes, but no month in 1984 has recorded output above comparable months in 1983.

June's drop in government output was only its second decline during the first half of 1984. Government output has been fairly stable during the past eighteen months, as month-to-month changes have rarely exceeded 1 percent.

In June, Nebraska's retail sales surpassed $800 million for the first time during 1984, totaling $822.8 million. This represents an increases of 7.5 percent from last June. After adjustments for price changes, real retail sales exhibited moderate strength, growing 2.7 percent. This was, however, considerably below the national increase of 6.8 percent for the comparable period.

At $113.6 million, motor vehicle sales reached the highest volume ever recorded, 12.9 percent higher than last year. This growth is somewhat misleading--prices also grew rapidly, resulting in a loss of 1.2 percent in real terms. In addition, almost all of the growth in the unadjusted sales occurred in the Omaha area, where sales approached $50 million.

Nonmotor vehicle sales reached $709.2 million in June 1984, up 6.7 percent from June 1983. The price-adjusted rise in these sales was 3.2 percent. As has been the case throughout 1984, June's increase was concentrated in the state's metropolitan areas.

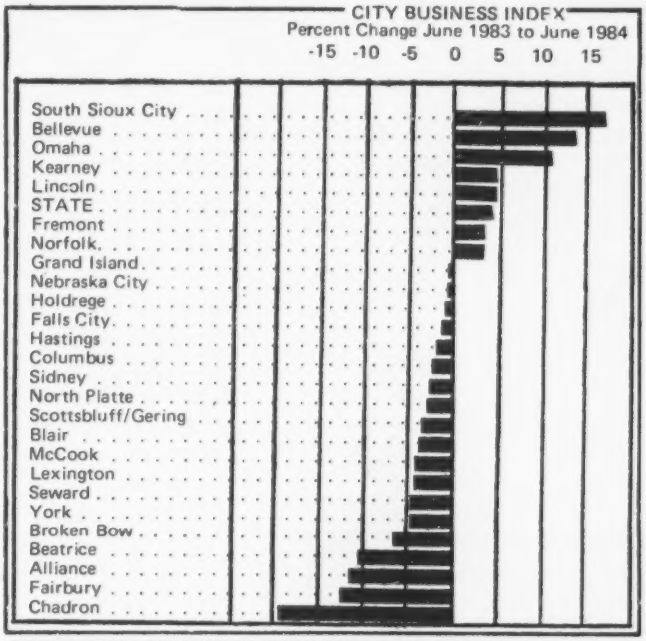
The relative sales strength of the state's metropolitan areas is reflected in the city business indexes, as four of the five cities with the fastest growth rates were located there. Overall, seven of the twenty-six cities in Table 4 recorded increases in June 1984 relative to June 1983. South Sioux City had the highest gain of 16.3 percent. The remaining cities with increases in activity were Bellevue, 13.9 percent; Omaha, 10.6 percent; Kearney and Lincoln, 4.4 percent; and Fremont and Norfolk, 3.1 percent.

JEROME A. DEICHERT

5. PRICE INDEXES

June 1984	Index (1967 = 100)	Percent of Same Month Last Year	Year to Date as Percent of Same Period Last Year*
Consumer Prices	310.7	104.2	104.4
Commodity component	280.6	103.3	103.9
Wholesale Prices	311.4	103.0	103.1
Agricultural Prices			
United States	260.0	107.9	108.2
Nebraska	252.0	105.0	104.9

*Using arithmetic average of monthly indexes.
Sources: Consumer and Wholesale Prices: U.S. Bureau of Labor Statistics; Agricultural Prices: U.S. Department of Agriculture.



4. June 1984 CITY BUSINESS INDICATORS

The State and Its Trading Centers	Percent of Same Month a Year Ago: Employment[1]	Building Activity[2]	Power Consumption[3]
The State	102.4	131.0	101.0
Alliance	99.5	25.3	86.7
Beatrice	102.1	51.9	73.3
Bellevue	104.0	156.8	88.4
Blair	100.7	52.9	101.6
Broken Bow	101.5	63.0	92.1
Chadron	103.3	4.1	98.2
Columbus	102.4	79.8	85.0
Fairbury	102.4	43.4	123.3
Falls City	100.9	316.3	104.9
Fremont	101.9	173.2	143.9*
Grand Island	101.9	78.6	111.6
Hastings	101.9	85.8	132.6
Holdrege	100.8	76.7	109.7
Kearney	101.8	232.4	102.4
Lexington	102.3	54.9	104.7
Lincoln	102.7	122.4	102.9
McCook	99.7	117.1	98.3
Nebraska City	101.4	206.8	105.4
Norfolk	102.1	206.4	91.2
North Platte	104.1	74.3	92.3
Omaha	104.0	178.4	105.3
Scottsbluff/Gering	101.6	85.7	75.1
Seward	102.1	114.5	98.6
Sidney	100.3	136.8	88.9
So. Sioux City	101.5	100.9	97.3
York	101.8	81.3	89.8

[1] As a proxy for city employment, total employment for the county in which a city is located is used.
[2] Building Activity is the value of building permits issued as spread over an appropriate time period of construction. The U.S. Department of Commerce Composite Construction Cost Index is used to adjust construction activity for price changes.
[3] Power Consumption is a combined index of consumption of electricity and natural gas except in cases marked * for which only one is used.

Source: Compilation by Bureau of Business Research from reports of private and public agencies.

NEBRASKA POPULATION PROJECTIONS 1985-2020

In addition to population estimates, the Bureau of Business Research periodically prepares population projections for the state. These projections can be used for planning by state and local governmental agencies, business firms, labor unions, and other organizations. For example, businesses can use them to target products for a specific age group, or schools can use them to determine future needs for buildings and teachers.

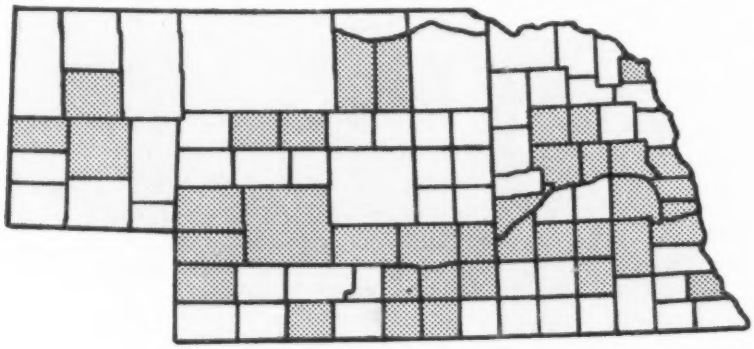
The latest projections were prepared in November 1982 and were based on data from the 1980 census. Projections were made for the state and counties by age and sex for the years 1985, 1990, 1995, 2000, 2005, 2010, 2015, and 2020 and were published in *Nebraska Population Projections 1985-2020.*

This publication contains three projection series—high, medium , and low—based on differing assumptions of net migration. The medium series most closely reflects the trends revealed in the 1980 census and 1982 estimates. At the state level, age information is provided for five-year age groups and 75+. The information at the county level is not as detailed and is available for the age groups 0-4, 5-14, 15-24, 25-44, 45-64, and 65+. In addition, a special tabulation was made for the 0-17 age group.

When using projections, it is important to note the distinction between projections and the current estimates mentioned earlier. Current estimates make use of actual post-1980 census data from the recent past (1981 and 1982), such as reported births and deaths, to measure change from 1980. Projections, on the other hand, are forecasts of future populations based on assumptions of expected births, deaths, and migration.

Copies of *Nebraska Population Projections 1985-2020* are available for $17.50 from the Bureau of Business Research, 200 CBA, University of Nebraska-Lincoln, Lincoln, NE 68588-0406. Checks should be made payable to the Bureau of Business Research.

Chart 1
Nebraska Counties With Expected Population Gain Between 1980 and 1990



Shaded portion indicates those counties with expected population growth

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